HAZMAT SYSTEMS

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Frozen Tuna Surprise Bag Filling Machine
MODEL X15
Job Number 32768
for Valley Girl Foods

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Disclaimer

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This document could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes may be incorporated in new editions of the publication.

Introduction

Frozen Tuna Surprise Bag Filling Machine
MODEL X15
for Valley Girl Foods

Job Number 32768

Parts of this Manual

- This *Introduction* section has a brief description of the machine, safety instructions, and other introductory material.
- The *Changeover* section describes changing the machine to run a different size bag or food product.
- The *Operation* section describes how to load, start and stop the machine.
- The *Maintenance* section describes periodic lubrication and other adjustments or maintenance issues.

Warning Codes

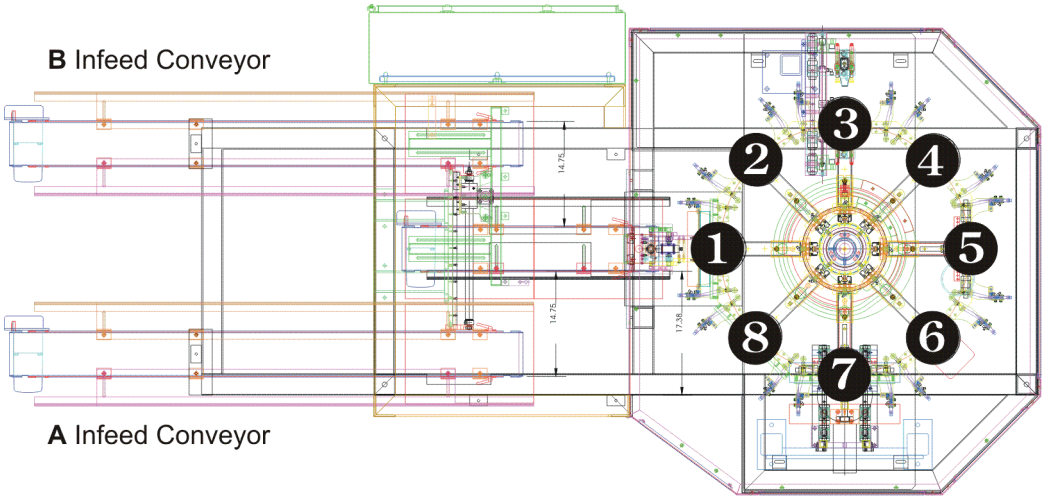
Indicates that failure to follow the described procedure can cause damage to equipment.

Indicates that failure to follow the described procedure and observe its warnings can result in damage to equipment and/or injury to personnel.

Description

The Model X15 frozen food bagging machine fills and seals varying sizes and styles of bags with frozen Tuna Surprise with Jelly packets. The maximum bag size is 13" wide x 18" long, with a maximum fill weight of 10 pounds. Throughput is 40 filled and sealed bags per minute.

Figure 1 System Components



Mechanism Description

The machine consists of an eight-station Rotary Dial style machine and a Bag Feeding System. The Rotary Dial portion of the system includes the Bag Load, Bag Marking, (optional) Bag Opening, Bag Filling, Bag Sealing, and the Bag Eject/Reject Functions.

Bag Feeding System

The bag feeding system consists of two flat-belt *Shingling Conveyors* and a *Pick and Place*. Each conveyor holds approximately 200 bags, depending on the size and other characteristics of the bag. (For a total of 400 bags, this provides 10 minutes of storage at 40 parts per minute.) The conveyors work in conjunction with sensors to register the bags for the Pick and Place mechanism.

The *Pick and Place* is a two-head pneumatic device that removes individual bags from the stacks on the Shingling Conveyors and transfers them to the *Bag Loading Conveyor*. The double head picks a bag from one Shingling Conveyor while simultaneously placing a bag previously taken from the other Shingling Conveyor.

Indexing Dial

The Indexing Dial includes No-Tool changeover for the *Bag Clamp Tooling.* The bag clamps are spring loaded and actuated at the appropriate stations by pneumatic actuators. During indexing, a *Center Cam* is used to raise and lower the *Hoppers* at the appropriate stations to facilitate filling of the bags.

Hopper System

The indexing dial employs a hopper for each bag clamp mechanism. The hoppers rotate with the dial and direct product from the customer's Filling System into the open bag at the appropriate filling station. The hoppers raise and lower with the Center Cam.

Dial Stations

Bag Loading (Station #1)

- Bag Loading Conveyor – This conveyor and its side guides receives the bags from the Pick and Place and registers them for pick up by the Bag Loading Actuator.

- Bag Loading Actuator – This station consists of a single linear air cylinder pick and place guided by linear bearings, and incorporates cam tracks that generate the loading motion.

- Pick-Up Head – This end effector consists of a mechanical gripper mechanism. Clamping fingers positively grip each bag as it is lifted into the dial bag clamps.

Recycling Bags – If the machine detects that a bag is in the dial bag clamps, but has not been successfully opened, it will not attempt to load product into the bag. The Dial will cycle the bag back to Station 1. The bag will then be released and slide down a chute and into a hopper under the Bag Loading Conveyor. This will allow accumulation of unfilled bags in a sanitary bin. The bags can then be removed from the bin and re-used.

Printer Station (Optional) (Station #2)

This station allows for mounting a date coding printer.

Bag Opening Station (Station #3)

Bag Opening Mechanism – The Bag Opening Mechanism uses pneumatic actuators to open the bag. Vacuum cups grip each side of the bag and separate the sides. This allows the positive gripping jaws to descend, grabbing each bag side and then pull the bag open.

Shuttle – A Shuttle mechanism actuates as the bag is being pulled open by the Bag Opening Mechanism. This shuttle reduces the distance between the Bag Clamps on the Dial at Station #3. (This motion prevents the bag from being pulled out of the Bag Clamps during the bag opening process.)

Blow Open Pipe – A Blow Open Pipe is positioned above the Hopper at the Bag Opening Station. When the bag is pulled open by the Bag Opening Mechanism, a burst of air from the Blow Open Pipe inflates the bag to allow for proper product filling. In the event the bag does not open on the first attempt, a second burst of air will attempt to open the bag. If the bag still does not open, it will be re-cycled at Station #1.

Secondary Blow Open Pipe – A secondary blow-open pipe is sometimes incorporated. This second burst of air occurs during the index from Station #3 to Station #4, and prevents the bag from closing before the hopper descends into it.

Fill Area General Features (Stations #4-5-6)

This is the customer-fill area. These stations can be used for interfacing with the customer's filling equipment.

- Optional Pneumatic Bag Tamper – A pneumatically actuated tamping mechanism may be required for settling some products in the bag. This is normally mounted at Station #6.

Heat Seal Station (Station #7)

The Heat Seal Station consists of a resistant element strip and controller mounted to a pneumatically actuated clamping device. The customer can adjust the pre-heat temperature, sealing temperature and time, as well as the cool-down/release temperature. A regulator is provided to allow adjustment of clamp pressure.

- Optional Product Reject – If the customer's product delivery system senses that an incorrect quantity of product has been dispensed into the bag, an optional Product Reject can be installed at Station #7. Instead of sealing the bag, the Product Reject will release the bag from the Bag Clamps. The improperly filled bag will slide out of the machine into a customer-supplied bin.

- Optional Punch Set – A Punch Set is available to produce a hole on the heat seal end of the bag for hanging displays during the heat seal process.

- Optional Express Air Bag - An optional mechanism is available to compress the bag to reduce enclosed air prior to the heat sealing process.

Off-Load Station (Station #8)

This station is used to release the sealed bags from the machine. The height of a customer supplied discharge conveyor must be less than or equal to 20 inches in height.

Bag Details

The X15 machine can handle bags within the following size/weight range (Table 1). The bag width must not exceed the bag length by greater than 15% of the bag length.

Table 1 X15 Bag Specifications

Bag Width (inches)	Bag Length (inches)	Maximum Bag Weight	Dry Cycle Rate (100% Efficiency)	Throughput Rate (90% Efficiency)
8-13	7-18	10 lbs.	45/min	40/min

Table 2 Valley Girl Bag Specifications

Bag	**1**	**2**	**3**	**4**
Bag Width (in.)	8-1/2"	10-1/2	10-1/2"	12-1/4"
Bag Height (in.)	8-1/2"	13-1/2"	13-1/2"	14"
Product Weight	16 oz.	36-44 oz.	44 oz.	56 oz.
Product	28-32 Large Tuna Surprise	80-90 Large Tuna Surprise	80-90 Large Tuna Surprise	92-100 Large Tuna Surprise
Gusset	Yes	No	No	No
Zipper	No	Yes	Yes	Yes
Sauce Pouch	1	2	2	2
Bottom Fill	No	Yes	Yes	Yes
Bags Per Min.	40	34	34	32
Required Speed of Weigher	50 bags/min	40 bags/min	40 bags/min	38 bags/min

Possible combinations of bags include:

1. **Stand-up Pouch –** This bag has a bottom gusset, but does not have a zipper. Filling and sealing are conducted through the top of the bag. (Printing on the bag is in an upright (vertical) readable orientation when the bag is hanging in the carousel bag clamps.)

2. **Stand-up Pouch with Zipper –** This bag has a bottom gusset and a top zipper. Filling and sealing are conducted through the top of the bag. (Printing on the bag is in an upright (vertical) readable orientation when the bag is hanging in the carousel bag clamps.)

3. **Zipper Pouch without Gusset –** This bag is provided with the zipper closed and the top of the bag is sealed. Filling is performed through the bottom of the bag and the bag requires a heat seal on the bottom of the bag. (Printing on the bag is in an upside down orientation when the bag is hanging in the carousel clamps.) (This bag may or may not have a hanger hole pre-punched in it.)

- **Zipper Location –** For bags that are sealed on the zipper end of the bag, the edge of the zipper closest to the top of the bag must be no less than ¾ inch and no more than 1¼ inches from the end of the bag.

- **Zipper Size –** Each zipper configuration will be evaluated and test-run at supplier's facility.

- **Heat Seal Location Tolerance –** The location of the seal from the top (or bottom) of the bag will be specified by the individual customer. The 'line' of the seal will be within a +/-1/16 inch range of the customer-specified dimension. The top or bottom of the bag refers to the 'fill-opening'. The seal will always be on the fill-opening end of the bag; this is the end pointing up.

- **Bag Shape – This machine is designed for rectangular bags.** Any non-rectangular bag or any bag that does not fit within the bag dimensions specified above, must be evaluated for this machine and may require special tooling.

- **Bag Materials and Thickness –** Bags will be made from PET, PE, LDPE or Nylon and the material will be at least 2mils. (.002 inches) thick. Other materials or thicknesses must be evaluated for use on this machine.

Fill Products

All products that fill the bag must be compatible with the heat sealing process and must not effect the bag in a manner that is deleterious to the seal heads.

Sequence of Operations

(Assumes all line changes made)

1. The operator shingles bags on the Shingling Conveyors.

2. The Shingling Conveyors advance until the leading ends of the shingled bags are sensed at the off load end of the conveyors.

3. The Pick and Place alternately picks and places individual bags from the Shingling Conveyors onto the Bag Loading Conveyor.

4. The Bag Loading Conveyor transfers the bag and registers it for loading.

5. The Bag Loading Actuator descends over the leading end of the bag.

6. The Pickup Head grips the bag.

7. The Bag Loading Actuator lifts and places the bag into position between the Dial Bag Clamps at Station #1.

8. The Bag Clamps at Station #1 are actuated closed.

9. The Pickup Head releases the bag.

10. The Bag Loading Actuator descends over the leading end of the next queued bag.

11. The Dial (Carousel) indexes the bag to Station #2.

12. A sensor at Station #2 indicates that a bag has been loaded.

13. (If installed) the Optional Printer actuates at Station #2.

14. The Dial indexes the bag to Station #3.

15. The jaws of the Bag Opening Station close and the vacuum cups extend.

16. Vacuum is turned on.

17. The vacuum cups are retracted.

18. The clamps descend and grip the bag.

19. The jaws open, pulling the bag open. Simultaneously, the Shuttle is actuated reducing the spacing between the Dial Bag Clamps.

20. The Blow Open Pipe is activated inflating the bag.

21. The clamps lift.

22. The vacuum is turned off.

23. The Dial indexes the opened bag to Station #4. During the index the Hopper descends into the opened bag. (On some machines, a secondary blow-open pipe will be activated during this index to keep the bag open while the hopper is descending into the bag.)

24. At Stations #4-5-6, the customer's product dispensing system(s) drops product into the Hoppers. *Optionally, prepackaged products are dropped through the Hoppers into the bags at one of these stations.*

25. At Station #6, an optional Bag Tamper (if installed) cycles repeatedly up and down to assist in settling the product in the bag.

26. The Dial indexes to Station #7.

27. At Station #7, the Heat Sealer clamps the bag and performs the sealing process.

    - If installed, the optional Air Express device will actuate just prior to the Heat Sealer's actuation to remove excess air from the bag prior to sealing.

    - If installed, a die set added to the jaws of the Sealing Station punches a hole for product hanging displays.

    - If installed, the optional Bag Reject releases bags that have been filled with an incorrect amount of product into a customer supplied holding bin. (A signal indicating improper filling must be sent from the customer's dispensing equipment.)

28. The Dial Indexes to Station #8.

29. At Station #8, the Dial Bag Clamps are actuated open, releasing the completed product out of the machine.

30. If installed, the optional conveyor transfers completed product away from the machine.

31. The Dial indexes to Station #1.

32. The Bag Clamps at Station #1 are actuated open.

33. If the bag was not previously opened properly, the bag will fall into a sanitary bin for reuse.

34. The Cycle repeats, continues.

Power and Control Specifications

Air Pressure (customer supplied)	5.3 BAR (80 psig) minimum clean air
Vacuum	On-board Venturi vacuum sources
Power	240 VAC, 1-Phase, 50/60 Hz 2 wire + ground wire. 60 amp service
Controller	Allen-Bradley SLC 5/04 Allen-Bradley PanelView 600 Human-Machine Interface (HMI) Inputs 24 VDC Outputs 24 VDC
Light Stack	Red Fault Amber Low supplies Green (Steady) Machine is in cycle Green (Flashing) Machine is stopping Blue Machine is in Jog Mode

Changeover

Changeover of the System for Different Size Bags

WARNING **To avoid possible injury, make certain that the power is off (E Stop is pressed) before making any changes or adjustments to the Machine.**

Dial Bag Clamps

Important! **Make sure that Step 1 is completed first.**

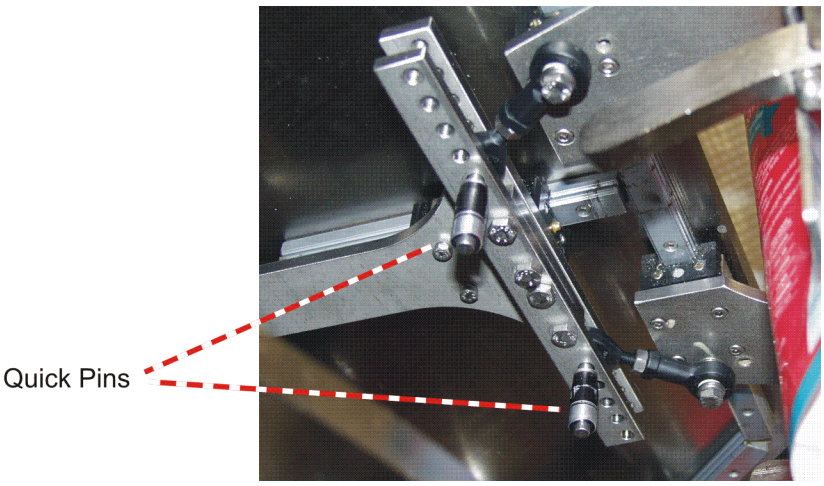
Step 1. Open the guard door at Station 5 (This will E-stop the machine). Remove the quick pins from the Dial Bag Clamps, then move the clamps to the new position and replace the quick pins.

Step 2. Manually push the Carousel to the next position.

Step 3. Repeat the above steps until all eight sets of Dial Bag Clamps have been moved to the new position.

Step 4. Close the guard door.

Figure 2 Bag Width Adjustment

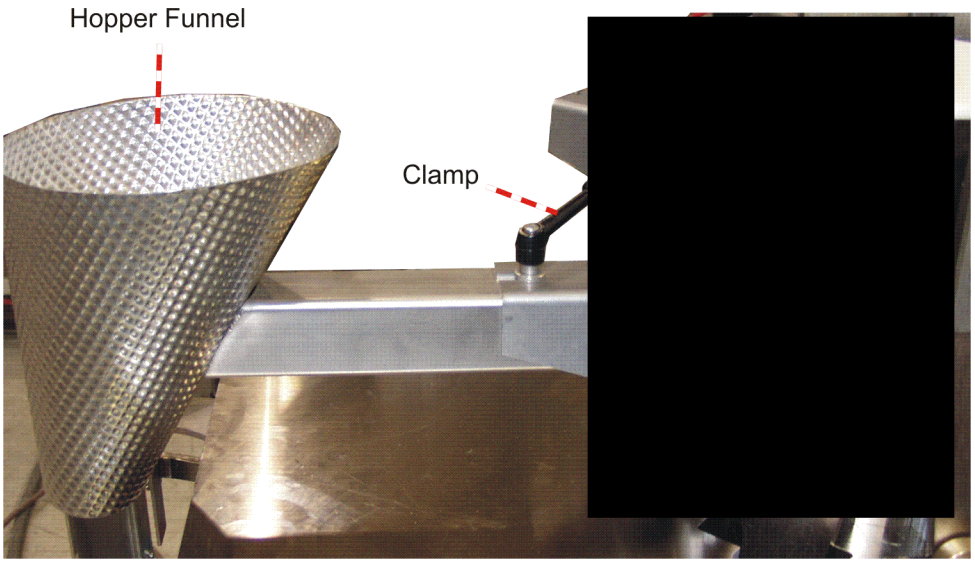


Hoppers

Some changeovers may require changing the Hopper funnels. If multiple sets of Hoppers were shipped with your machine, an adjustable clamping handle will be installed to secure your hoppers.

Step 1. Open the guard door at Station 5 (This will E-stop the machine). Loosen the adjustable clamping handle and remove the Hopper. Install the required Hopper and retighten the handle.

Figure 3 Hopper Funnel and Clamp



Step 2. Manually push the Carousel to the next position.

Step 3. Repeat the first two steps until all eight Hoppers have been replaced. Close the guard door. (Note that this procedure can be completed in conjunction with the Dial Bag Clamps instructions, as long as the bag width is adjusted first.)

Optional Bag Tamper and Bag Support(s)

If the Optional Bag Tamper and/or Optional Bag Support(s) are installed in your machine, they can now be moved to their required positions while you are still inside the Station 5 guard door.

The best locations for these devices will be determined by machine operators during production. When these locations are determined, a permanent marker can be used to mark the locations for quicker changeovers.

Close the guard door.

PanelView Touch Panel Changes

Make the required changes on the Touch Panel as described in the Settings Screen section of this manual.

You may need to change the machine cycle speed and/or heat sealing parameters. Heat sealing parameters will be determined over time by machine operators to produce the best heat seal. These should be documented so that they can be quickly changed for each machine changeover.

Pickup Head Jaws

Replace the jaws of the Pickup Head on the Bag Loader.

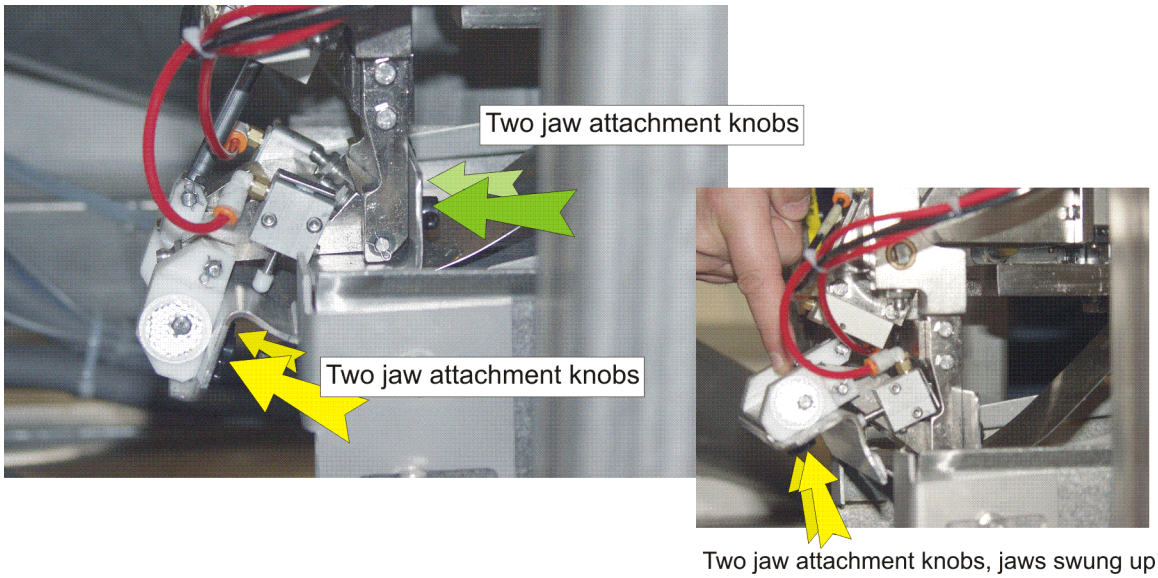
Step 1. Put the Touch Panel in 'Jog' Mode. Cycle the Bag Loader to the 'Up' position. (This will lift the jaws to their highest position and place them in the easiest position for replacement.)

Step 2. Open the guard door at Station 3 (causes an E-stop).

Step 3. Remove the two hand knobs from each of the two jaw segments. Remove the jaws and replace with the required jaws. Replace and retighten the four hand knobs.

Step 4. Close the guard door.

Figure 4 Pickup Head Jaws



Bag Open Sensors

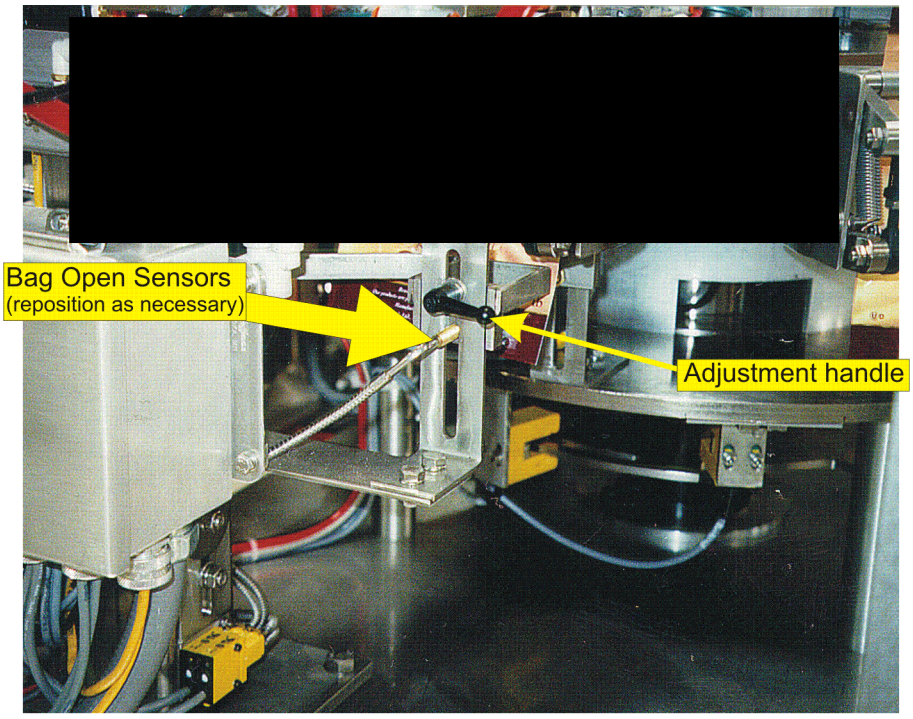
On some machines, when processing bags with pleated bottoms, the Bag Open Sensors located below the Bag Opener (Station 3) will require repositioning.

Step 1. Open the guard door at Station 3 (causes an E-stop).

Step 2. Loosen the Adjustable Handle on each of the two fiber optic sensors and move to the required positions. Marks on the sensor mounts will indicate the correct location for these sensors.

Step 3. Close the guard door.

Figure 5 Bag Open Sensors



(Generic bag filler photo—may not match yours exactly)

Bag Opener

On some machines, that process bags of significant bag width variation, the Bag Opener (Station 3) will require adjustment. If this is necessary on your machine, you will find two adjustable handles located on top of the Bag Opener at Station 3.

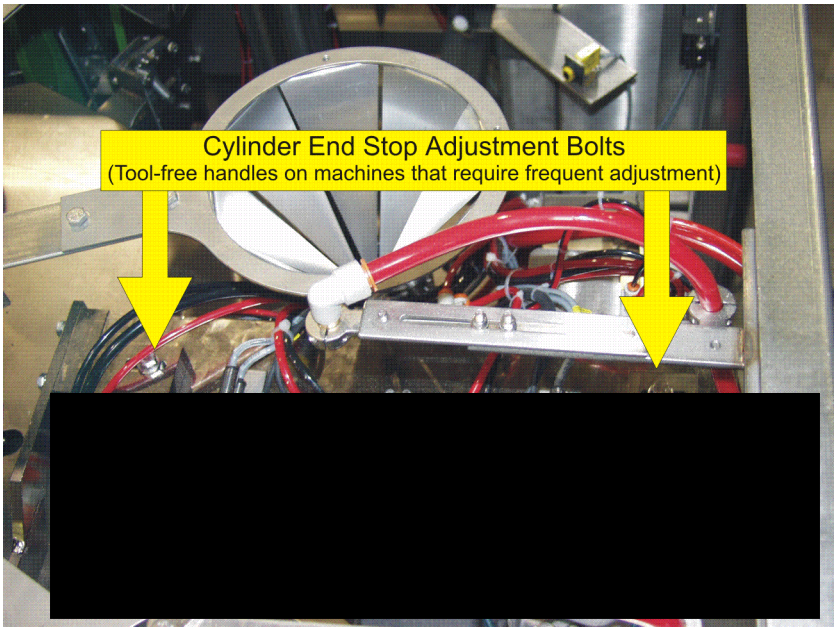
(Note: The Valley Girl machine does not require adjustment as shipped.)

Step 1. Open the guard door at Station 3 (causes an E-stop).

Step 2. Loosen the adjustable handles and reposition the cylinder end stops to the required position. Retighten the handles.

Step 3. Close the guard door.

Figure 6 Bag Opener Adjustment



Conveyor Side Rails

Width gages have been supplied to properly adjust the side guides on the two Shingling Conveyors and the Bag Loading Conveyor. (Note; If new bag widths are run, new width gauges should be made. Gauge width = bag width +3/16")

Step 1. Open the guard door by the Bag Pick and Place (causes an E-stop).

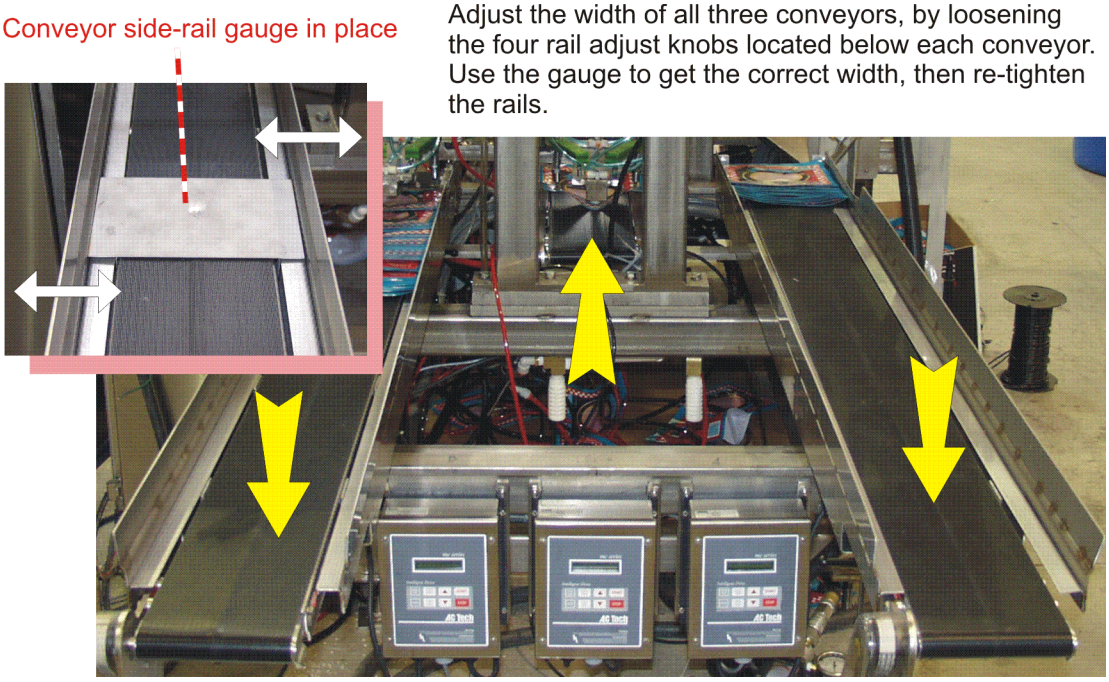
Step 2. Loosen the four adjustable handles under each of the three conveyors.

Step 3. Slide the side guides to their widest positions.

Step 4. Place the supplied width gages over the belts on the conveyors. Slide the side guides in until they contact the side guides.

Step 5. Retighten the adjustable handles. Close the guard door.

Figure 7 Conveyor Side Rail Adjustment



Vacuum Cups

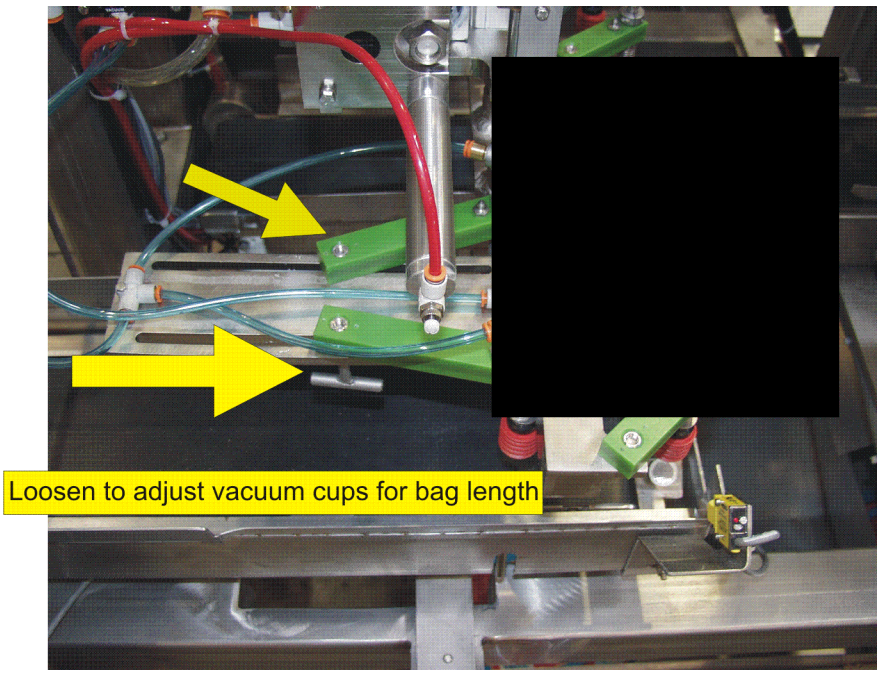
On some machines that process bags with significant length variation, the vacuum cups on Bag Pick and Place will require adjustment.

Step 1. Open the guard door by the Bag Pick and Place (causes an E-stop).

Step 2. Loosen the T-knobs located under the Pick and Place end effector and slide the vacuum cup assembly to the required position.

Step 3. Retighten the T-knobs. Close the guard door.

Figure 8 Vacuum Cup Adjustment



Date Coder

If your machine has an Optional Date Coder installed, it may need repositioning when changing bag sizes. The Date Coder will normally be located at Station 2.

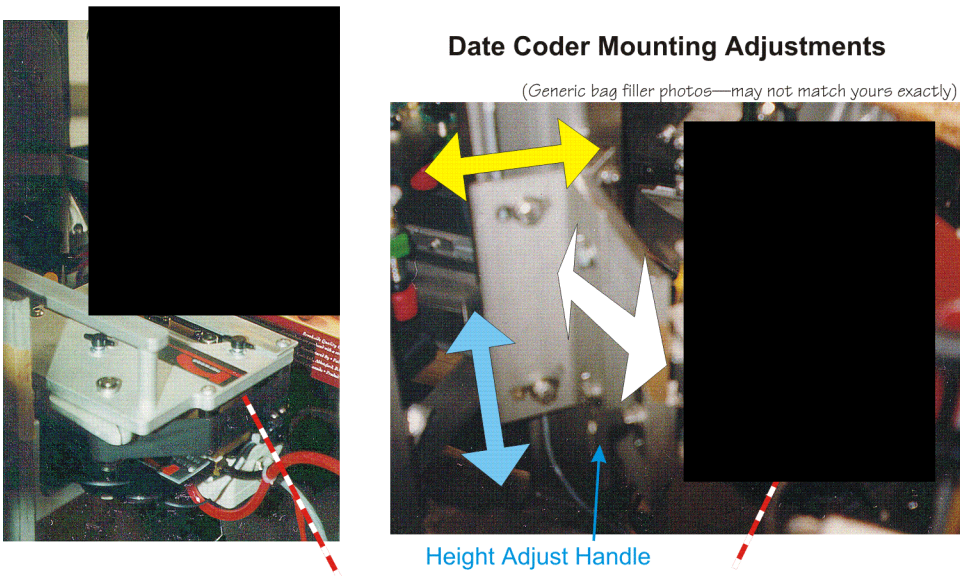
(Note: The Valley Girl machine does not have a Date Coder as shipped.)

Step 1. Open the guard door at Station 3 (this will E-stop the machine).

Step 2. Make the required adjustments. (Note that the steps in adjusting your Date Coder will be determined by the type of Date Coder that is on your machine.)

Step 3. Close the guard door.

Figure 9 Date Coder Adjustment



Note that if horizontal or lateral adjustment of the date coder is necessary, the appropriate (non-tool) adjustable handles will be installed, replacing the bolts shown.

Operation

WARNING **Do not attempt to defeat the safety interlock and operate the machine with the access doors open.**

Starting the Machine *(Suggested Procedure)*

Step 1. Complete the changeover procedure for the product being run.

Step 2. Verify that all changeover parts are securely fastened.

Step 3. Load the bags on the 2 Infeed Conveyors.

Step 4. Go to the JOG SCREEN and make sure the machine is in "Auto Cycle" mode.

Step 5. Go to the RUN SCREEN and make sure that the machine is in "Bag Loading Mode," not "Cleanout Mode."

Step 6. Go to the COUNTS & RATES SCREEN and Reset the counters. (Your own company procedures will dictate when this is actually done; at the end of a run, the end of a shift, the end of a day, etc.).

Step 7. Verify that all guard doors are closed.

Step 8. Correct any faults that are displayed on the PanelView Display.

Step 9. Verify that all personnel are clear of the machine.

Step 10. Press the "Power On" pushbutton to enable the control power and turn on the air.

Step 11. Press the "Cycle Start" pushbutton on the main enclosure or the "Cycle Start" button on the PanelView MAIN SCREEN to start the machine.

Step 12. The machine should start to run. If it does not run, look for fault messages on the "RUN SCREEN."

Running The Machine

- Keep the machine full of bags. Monitor the Amber light on the Stack Light: this light indicates low supplies
- Monitor the counts on the COUNTS & RATES SCREEN.
- If the machine is not cycling at rate, monitor the box in the lower-left corner of the PanelView on the Counts & Rates Screen to see which station is the last station to complete its cycle. Make an appropriate adjustment or contact a Maintenance Technician.
- Monitor the message display on the RUN SCREEN for faults. Correct faults as they occur.

Stopping the Machine

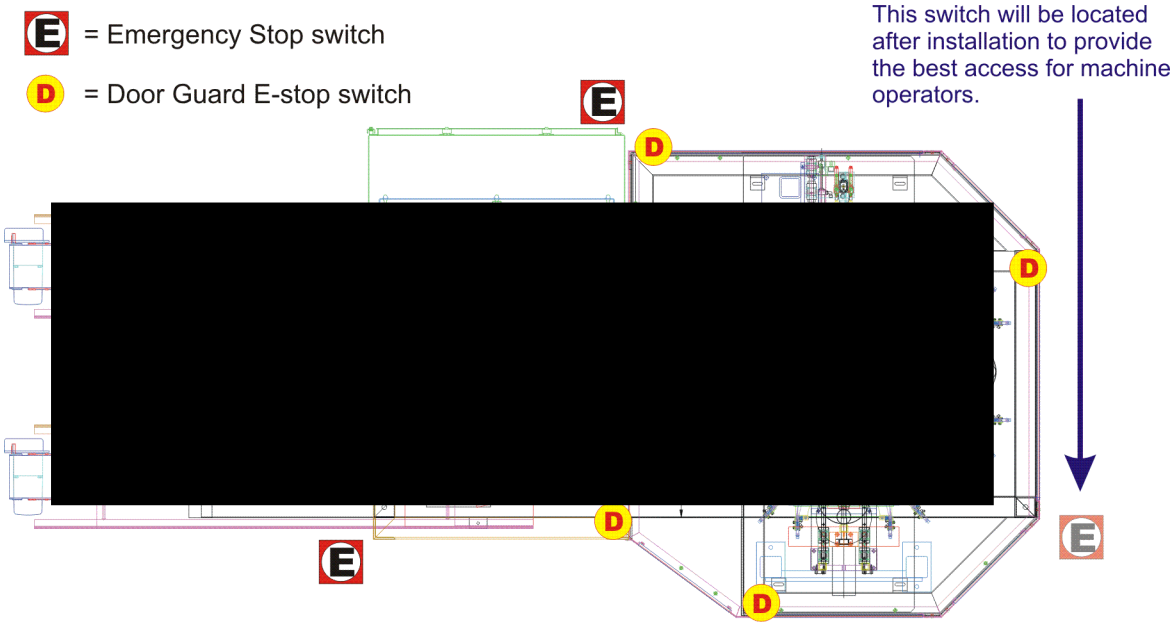
Emergency Stop

Do not use the Emergency Stop pushbuttons to stop the machine under normal operating conditions. Use the cycle stop pushbuttons for a controlled stop.

IN AN EMERGENCY, press one of the red "Emergency Stop" pushbuttons on the machine (Figure 10) or open one of the guard doors. This will stop the machine *immediately*, without regard to its current cycle. Air for the system will be dumped. After the emergency situation is cleared, pull the pressed Emergency Stop switch back out and follow the "Starting the Machine" procedure on page 28 to restart.

NOTE: Using an Emergency Stop pushbutton or opening a guard door during any phase of a Dial-Plate Index will result in all of the bags being treated as rejects. The reason is that the machine does not know where it stopped when it coasted to a stop, or if the Operator has manually moved the Dial-Plate.

Figure 10 Emergency Stop Switch Locations



Operator Stops

The Operator may stop the machine by pressing either the “Stop” pushbutton on the main enclosure, or the “Cycle Stop” button on the PanelView MAIN SCREEN.

To restart the machine after a Cycle Stop, follow the instructions in the “Starting the Machine” section (page 28), starting with **Step 7.**

Shutdown at the End of a Run

To clear the bags out of the machine at the end of a run:

Step 1. Cycle Stop the machine.

Step 2. On the RUN SCREEN, press the button to change from the "Bag Loading Mode" to the "Cleanout Mode."

Step 3. To restart the machine, follow the instructions in the "Starting the Machine" section (page 28), starting with **Step 7.**

The machine will run without loading the bags into the machine.

Operator's Panel

Figure 11 Operator's Control Panel

The Operator's Control Panel has the following switches:

- **Emergency Stop.** Stops the machine immediately, no matter what position the mechanisms are in. Cuts all power and air to the motors and valves, but leaves power to the PLC.

- **Power ON**. This controls the power to the machine's motors and the solenoid valves. This switch must be depressed ON for the machine to operate.

- **Cycle Start.** This is the normal "start" button, used to start up the machine once all changeover has been completed and once Auto Mode has been selected from the PanelView.

- **Stop.** The normal "stop" button, lets each mechanism complete its current cycle before stopping.

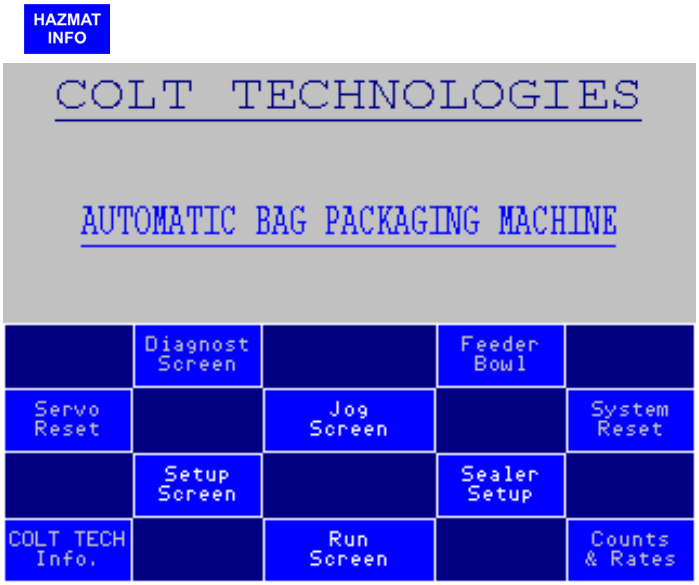
- **PanelView** Used for all other operations, and for data readouts and changeover adjustments. Indicates reasons for machine stops, etc.

Stack Light

Red	Fault
Amber	Low supplies
Green	(Steady) Machine is in cycle
Green	(Flashing) Machine is stopping
Blue	Machine is in Jog Mode

Control Panel Screens

Main Screen



This screen is used to go to all of the other control screens.

Screens Normally Used by the Operator:

Go to the Run Screen to run the machine. See page 37.

Go to the Jog Screen to jog the machine or a station. See page 39.

Go to the Setup Screen to adjust various run parameters. See page 41.

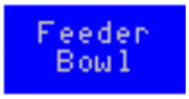
Go to the Counts & Rates Screen to monitor parts throughput and cycle times. Can also reset the counters. See page 47.

Screens used for Debugging and Maintenance:

Go to the Servo reset Screen to clear any servo motor faults, and to "Home" the servomotor after a restoring the main power to the system.

Press to go to the Diagnostics screen (page 55).

Press to go to the Reset screen (page 50).

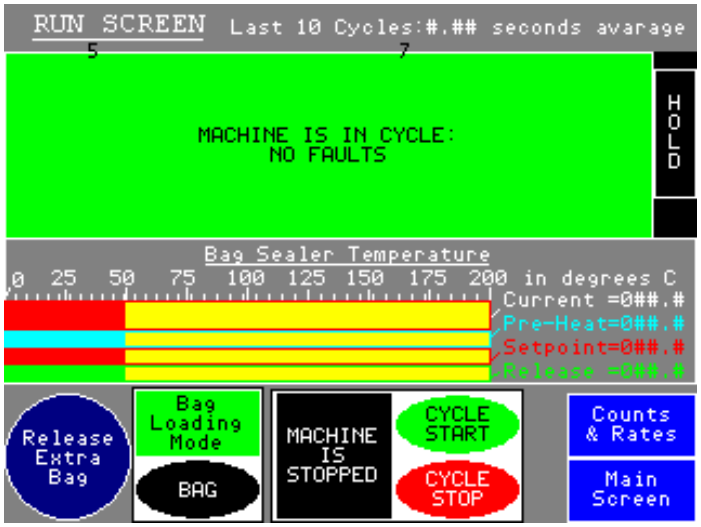


Go to the Feeder Bowl Screen to adjust the Feeder Bowl parameters.

Information Screen:

Contact Information: Hazmat Systems

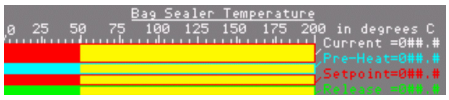
Run Screen



Machine Status / Information:

Message Display: Show the status of the machine and any machine faults (i.e.: “Waiting for bags on the Infeed Conveyor” or “Bag Sealer is not up to temperature”, etc.). The “HOLD” button on the right side of the screen inhibits the messages from scrolling when held, allowing the operator additional time to read the message. Pushing & releasing the button will also toggle through the active messages, without waiting for each message to time out.

Shows the average cycle time for the last 10 Machine Cycles.



Bag Sealer Temperature shows the following information:

Top Bar:	The current temperature of the sealing bar
Second Bar:	The pre-heat temperature setting
Third Bar:	The Sealing Temperature (Setpoint)
Bottom Line:	The Release Temperature

Machine Control:

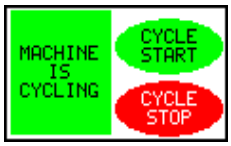
If the Infeed Conveyor Pick & Place does not properly transfer a bag to the Center Infeed Conveyor, pushing this button will cause the Pick & Place to release the next bag onto the Center Conveyor.

Selects between:

"Bag Loading Mode" (Green)

or "Cleanout Mode" (Yellow)

The left box shows the status of the machine (In-Cycle, Stopping, Jogging or Stopped). The Cycle Start button starts the machine, and the Cycle Stop button stops the machine.



Screen Control:

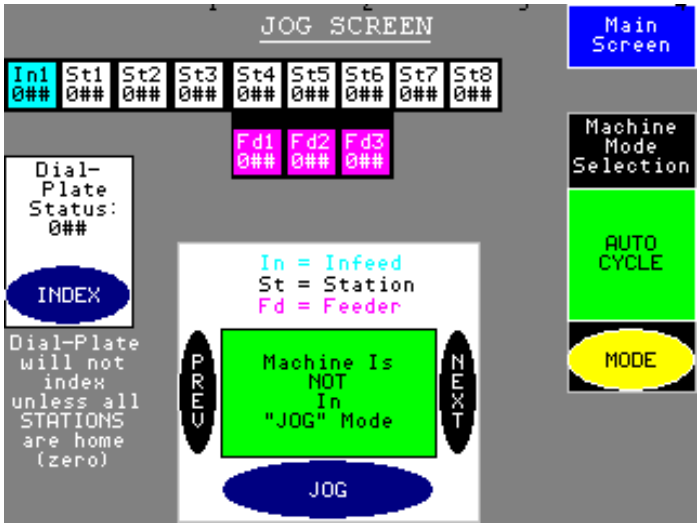
Counts & Rates

Go to the Counts & Rates Screen to monitor parts throughput and cycle times. Can also reset the counters. (See page 47.)

Main Screen

Go to the Main Screen (page 36).

Jog Screen



This screen is used to operate the machine intermittently for setup and maintenance purposes.

Machine Status:

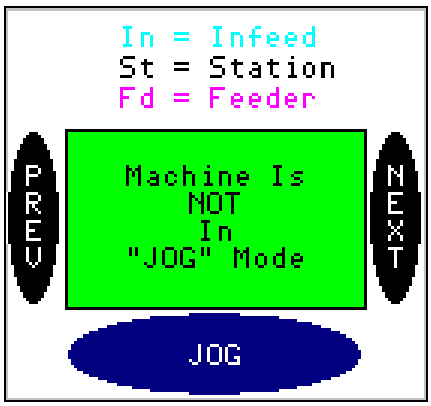
Shows the status of the individual stations. When a station has completed it's cycle, the value in the register will be "0". All stations must be "0" for the Dial-Plate to index.

Machine Control:

Select the operating mode of the machine:

Auto Cycle (Green)
Continuous Cycle Jog (Yellow)
Complete Cycle Jog (Yellow)
Single-Step Jog (Yellow)

The Mode button steps between these modes



Jog the individual station that is selected.

The station selected to be jogged is displayed in the center.

Select which station is to be jogged using the PREVious or NEXT button.

Pushing the Jog button will jog the station selected (i.e.: Bag Sealing) in the mode that is selected (i.e.: Single-Step Jog).

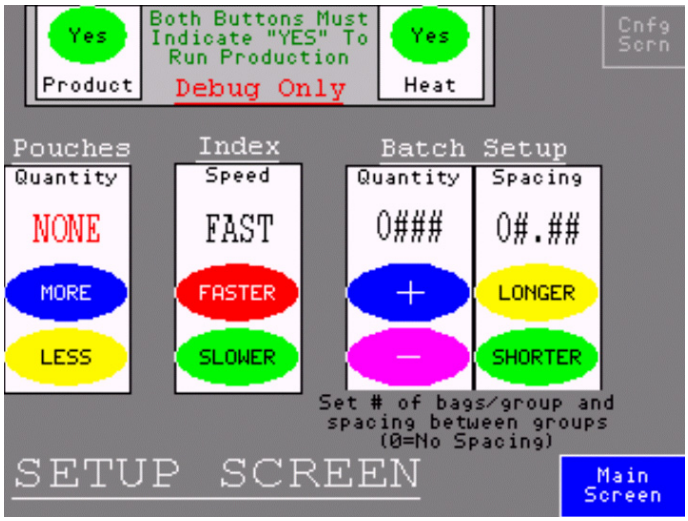
Jog the Dial-Plate one station.

Note: The Dial Plate will only index 1 station regardless of what Jog Mode the machine is in (in Jog Modes ONLY).

Screen Control:

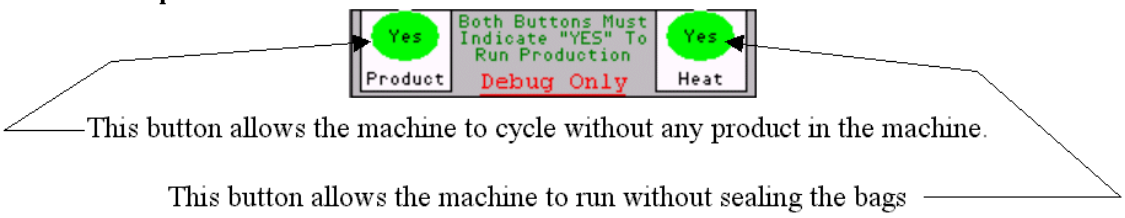
Go to the Main Screen (page 36).

Setup Screen

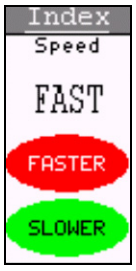


Machine Settings:

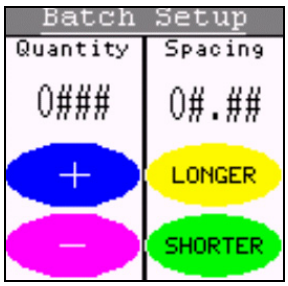
These buttons are used for Debug Purposes Only. They should indicate "Yes" to run normal production:



This is used to adjust the number of pouches that are to be inserted into each bag of product. The choices are None, 1, or 2 Pouches per Bag



The FASTER and SLOWER buttons are used to select between the SLOW, MEDIUM, and FAST Dial-Plate Indexing speeds.



Sets the Batch parameters:

The Quantity "+" and "-" buttons adjust the quantity of bags in each batch of bags on the exit conveyor (where used).

The LONGER and SHORTER buttons control the time / spacing between the groups of bags on the exit conveyor (where used).

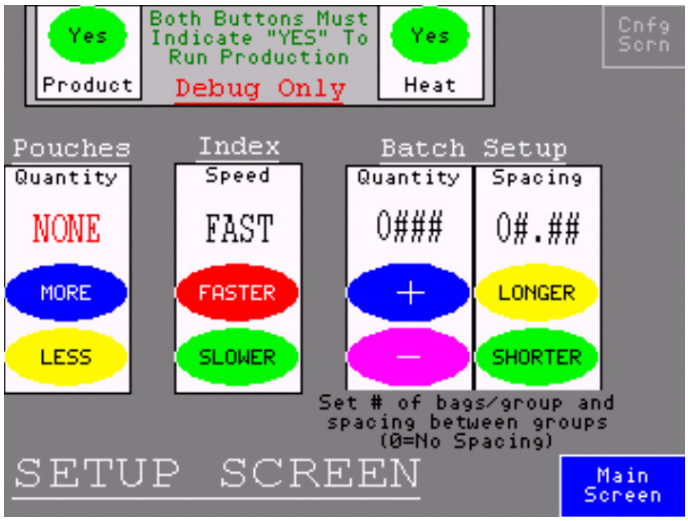
When either number is set to "0", the machine runs continuously.

This button is used to access the PanelView configuration. Normally this is used ONLY to adjust the current time and date.

Screen Control:

Go to the Main Screen (page 36).

Bag Sealer Setup Screen



Temperature Settings:

Increase or Decrease the Pre-Heat Temp (degrees C):

Pre-heating the Bag Sealing Jaws results in the first bags to be sealed after a delay in production, to be sealed more uniformly. Pre-heating the jaws also reduces the cycle time of the machine.

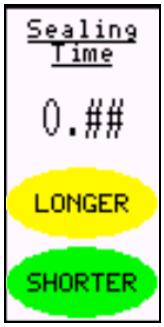
The Pre-Heat Temperature must NOT be greater than the Sealing Temperature or the Release Temperature.

Increase or Decrease the Sealing Temp (degrees C):

This is the temperature at which the bag is sealed.

Increase or Decrease the Sealing Time (Seconds):

This is the amount of time that the heated Sealing Jaws are clamped on the Bag while at the Sealing Temperature. After the preset time, the temperature is decrease to the Pre-Heat Temperature.



Increase or Decrease the Release Temp (degrees C):

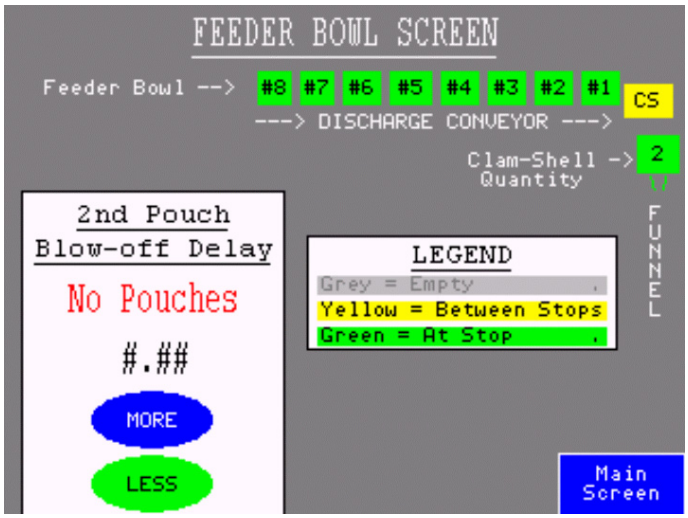
This is the cool-down temperature at which the Sealing Jaws are release. This setting must be greater or equal to the Pre-Heat Setting and less than or equal to the Sealing Temperature.

If this setting is the same as the Sealing Temperature, the Jaws will open as soon as the Sealing Time has expired.

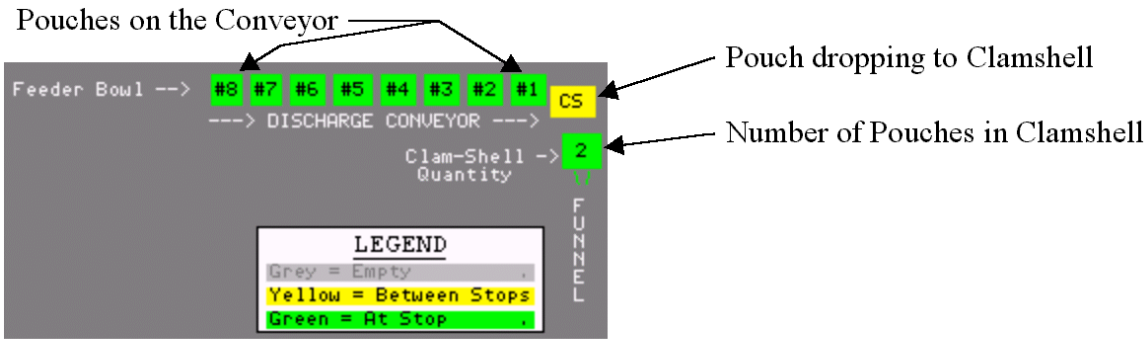
Screen Control:

Go to the Main Screen (page 36).

Feeder Bowl Screen

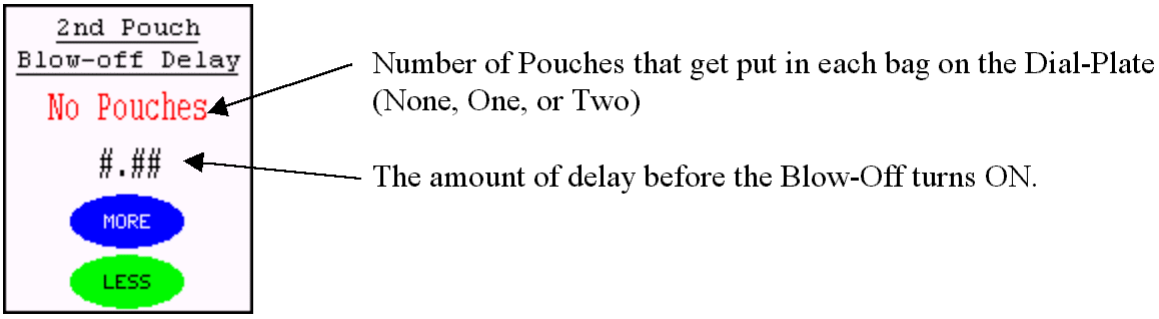


Shift Register:



This graphic shows the Pouches as they move from the Feeder Bowl, to the Clamshell, and into the Funnel on the Dial-Plate. The main purpose of this is to help debug the Feeder Bowl Conveyor if a problem occurs.

Blow-Off Delay:



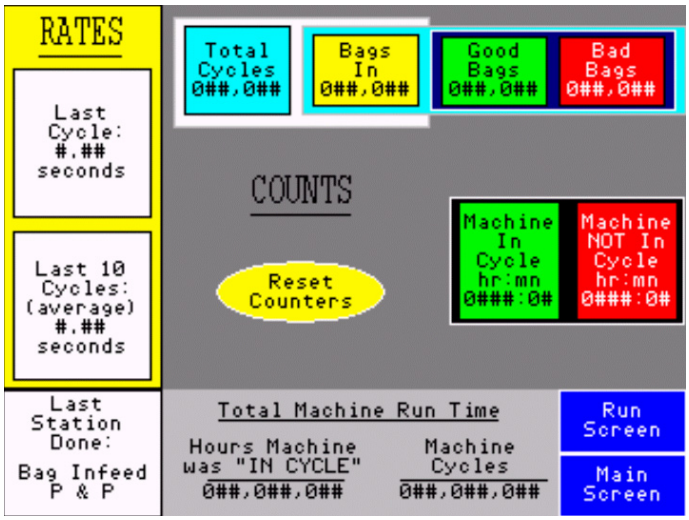
This adjustment controls the delay between the time when a Pouch makes the photo-eye in front of the Blow-Off and the time when the Blow-Off turns ON. The purpose of this delay is to only allow the first bag to transfer from the Feeder Bowl to the Conveyor in the event that there are 2 Pouches, end-to-end, going by the Blow-Off.

The settings are saved separately for the "One Pouch per Bag" and "Two Pouches per Bag" settings. The timer should be adjusted such that when a single Pouch goes by the Blow-Off on its' way to the Conveyor, the Blow-Off should NOT turn ON, or only turn on for a very short "puff" after the Pouch has passed the Blow-Off.

Screen Control:

Go to the Main Screen (page 36).

Counts & Rates Screen



This screen is used to display machine and operator performance.

Rates Information :

This portion displays Cycle Times:

This displays the time it took the last Cycle to complete (from end-of-index to end-of-index).

This displays the average time of the last 10 machine Cycles.

Shows which station was the last station to complete its cycle. Used mainly for debug when making adjustments to get the machine up to speed.

Counts (Product):

Shows counts relative to machine performance. These counts are re-settable with the Reset Counters button:

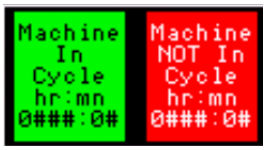
TOTAL CYCLES: Shows the number of times the machine has indexed. It will be greater than the Bags-In count.

BAGS IN: This shows the number of bags that have been loaded in from the conveyor at Dial-Plate Station #1.

GOOD BAGS: Shows the number of bags that have been discharged from the machine at the exit (chute or conveyor)

BAD BAGS: Shows the number of bags that have been rejected

Machine Run Time:



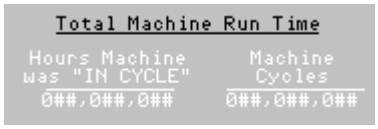
Shows the amount of time that the machine was NOT in Cycle (since resetting the counts).

Shows the amount of time that the machine was in Cycle (since resetting the counts).

Counts Reset:

Resets the Product and Machine Counts described above.

Non-Resetable Counts:



Shows the total amount of time the machine has been in cycle, and the total number of time the Dial-Plate has indexed. (These counters are NOT resettable with the Reset Counters button.)

Screen Control:

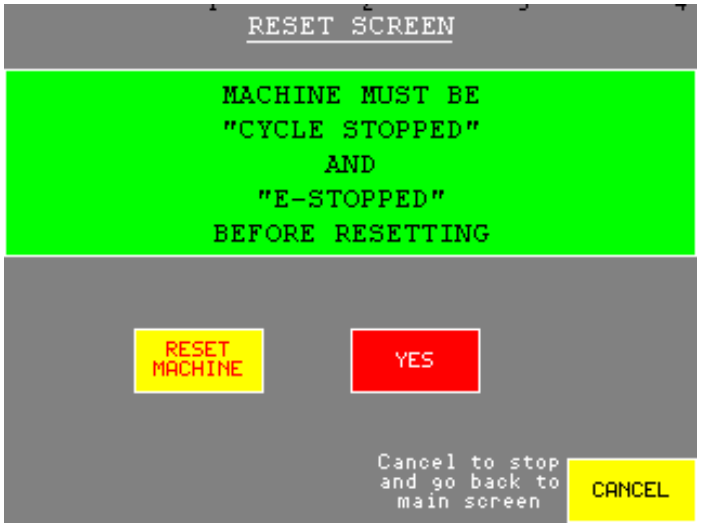
Main Screen

Go to the Main Screen (page 36).

Run Screen

Go to the Run Screen to run the machine. (See page 37.)

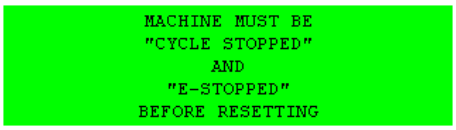
Reset Screen



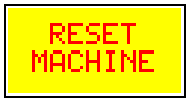
This screen is used to reset the entire machine in the event an unknown lockup occurs.

Reset Message Screen:

This screen prompts the Operator through the steps required to reset the entire machine.



Buttons:

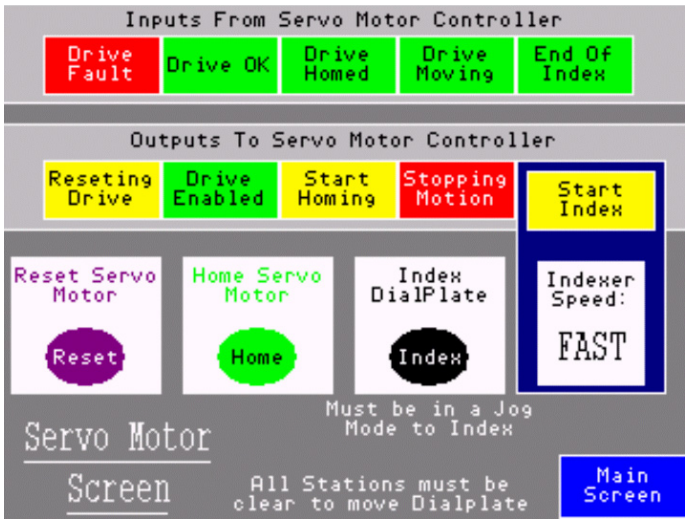


This button appears only if the machine is E-stopped. If the Operator presses it to reset the machine, this button disappears and the YES button appears.

This button appears after the Reset Machine button is pressed. The Operator is asked on the message display if they are sure they want to reset. Once the Operator presses this button, the machine will reset.

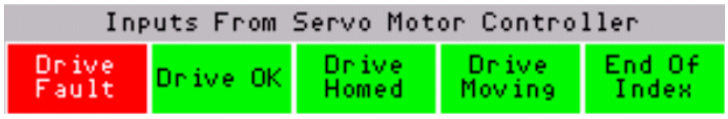
The Operator can press this button at any time to cancel the reset and go back to the Main Screen.

Servo Motor Screen



This screen is used to “Home” and debug the Servo Motor

Inputs From Servo Controller:



These are the inputs from the Servo Controller that feed into the PLC:

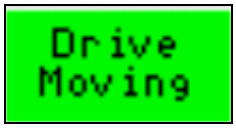
When this box is red (as shown), it indicates that there is a fault in the servo controller or servomotor. E-Stop the machine, then press the “Reset Servo Motor” button to reset the servo. If the fault does not clear, contact a Maintenance Technician.

When this box is green (as shown), it indicates that the servomotor does not have any faults.

When this box is green (as shown), it indicates that the servomotor has been “Homed”. That is to say that the servomotor has gone through a search routine to find out where it is.

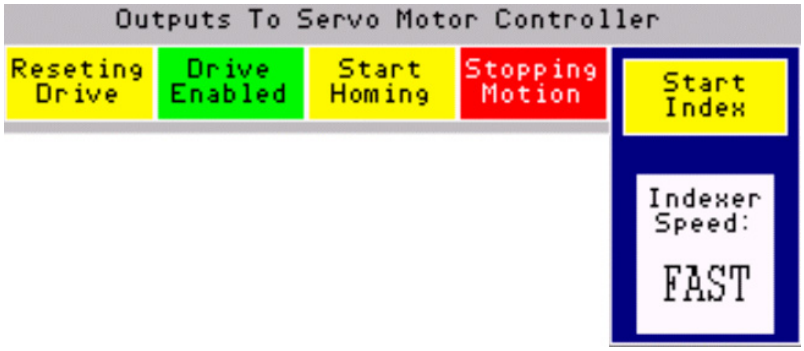
If the servomotor is not “Homed” and if there are no servomotor faults, make sure that the machine is clear, close all guards doors, press the “Power On” button to enable the control power, then press the “Home Servo Motor” button to “Home” the servo. The Dial-Plate will rotate until the servomotor finds it’s “Home” position.

When this box is green (as shown), it indicates that the servomotor is moving.



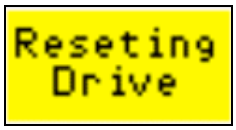
When this box is green (as shown), it indicates that the servomotor has completed the indexing of the Dial-Plate.

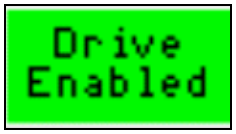
Outputs To Servo Controller:



These are the outputs to the Servo Controller from the PLC:

When this box is yellow (as shown), it indicates that the servomotor is being reset in response the to Operator pressing the "Reset Servo Motor" button (i.e.: to clear a servomotor fault).





When this box is green (as shown), it indicates that the servomotor is enabled and ready to move the Dial-Plate. All of the guard doors must be closed, and the control power must be enabled by pressing the "Power On" button for this button to turn on.

When this box is yellow (as shown), it indicates that the servomotor has been given the signal to "Home". This is initiated by the Operator pressing the "Home Servo Motor" button.

When this box is red (as shown), it indicates that the servomotor can not move because not all of the stations around the Dial-Plate are clear of the Dial-Plate. Initiating a movement could result in a crash and damage to the machine.

When this box is yellow (as shown), it indicates that the servomotor has been instructed to index the Dial-Plate.

This box indicates the speed at which the servomotor is to index the Dial-Plate (Slow, Medium, or Fast). This applies to both the Run mode and the Jog modes.

Servo Controller Buttons:

This button is used to reset any faults in the servo motor controller. If there is a fault, it should be indicated by the "Drive Fault" indicator previously described.

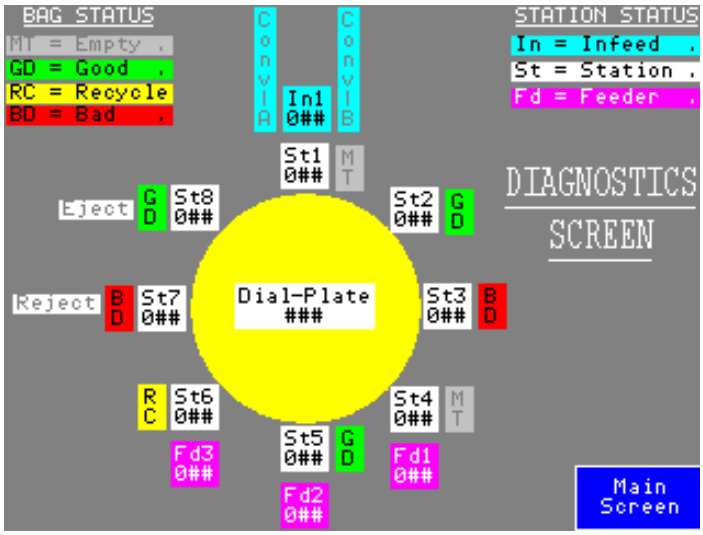
This button is used to "Home" the servomotor. If the servo-motor is not "Homed" and if there are no servomotor faults, make sure that the machine is clear, close all guards doors, press the "Power On" button to enable the control power, then press the "Home Servo Motor" button to "Home" the servo. The Dial-Plate will rotate until the servomotor finds its "Home" position.

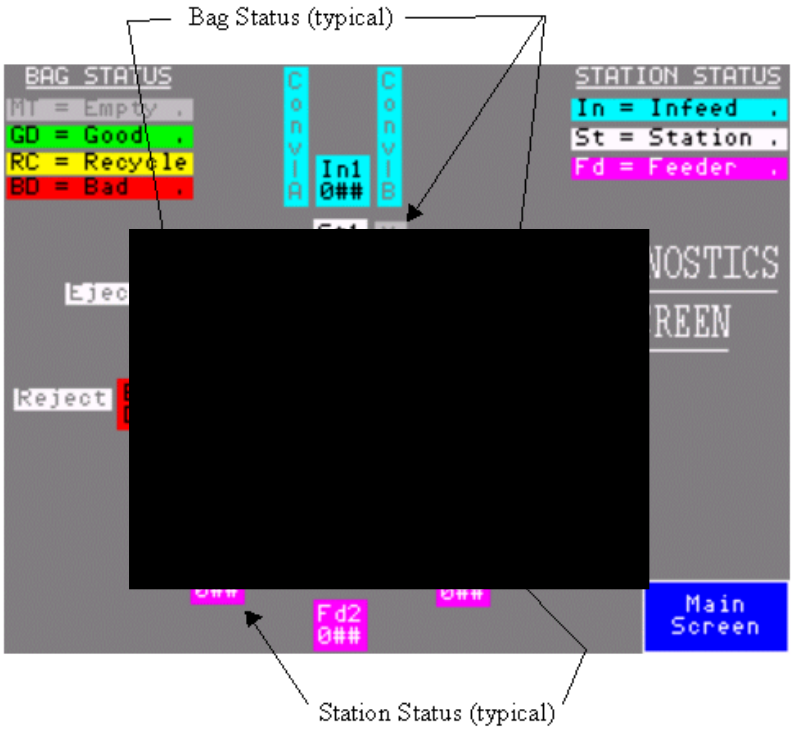
This button is used to index the Dial-Plate. The machine must be in one of the Jog modes, and all stations must be clear of the Dial-Plate.

Screen Control:

Go to the Main Screen (page 36).

Diagnostics Screen





Station Status:

These boxes indicate the status of the various stations. The numbers increment as the station is running, and resets to "0" when the station is done.

Infeed Conveyor Pick & place

Dial-Plate Station

Optional Feeding System

Bag Status:

Shows the status of the bad at each station:

Good Bag

Bad Bag

Empty (no bag)

Recycling the bag

Screen Control:

Go to the Main Screen (page 36).

Hazmat Information Screen

This screen shows how to contact Hazmet Systems.

Screen Control:

Main Screen	Go to the Main Screen (page 36).

Alarms

Alarms are displayed in the PanelView's "Run Screen" and are also indicated by the flashing red light in the light stack.

Clear all faults following the instructions on the screen.

Maintenance

WARNING **Do not attempt to defeat the safety interlock and operate the machine with the access doors open.**

PLC Battery Check

Every 50 hours of operation, the status of the PLC's battery should be checked. There is a "battery low" LED on the controller; check to see if it is lit. For safety's sake, the battery should be changed every three years. (See the PLC's manual for specific instructions on battery replacement.)

Cleaning

The entire machine should be cleaned on a regular basis. Conveyors and feeding surfaces should be vacuumed and/or blown off with clean air. If the movement of parts seems impeded, that area may need to be cleaned and de-greased.

The machine is designed to be washed down with clean water and mild detergents *only*. Grease zerks installed throughout the machine should be greased periodically to flush residual water and detergent out of moving parts.

WARNING **Before washing down the machine, turn off the Main Disconnect on the main electrical enclosure *and* the Disconnect / Circuit Breaker in the power drop to the machine. Also follow all other customer safety procedures.**

Periodic Lubrication

Every month of operation (or sooner, as experience dictates) check the oil level in the gearboxes, and lubricate the gearboxes and motor as directed by their respective manufacturer.

If this is a "wash-down" machine, every week of operation (or sooner, as experience dictates) grease the lubricatable bearings with a high-quality food-grade grease (like McMaster-Carr #1242K11). *Lubricating all fittings each wash-down will assist in flushing water and debris out of the bearings.*

*(The Valley Girl machine **is** a "wash-down" machine.)*

The lubrication points of the system are indicated on the following pages.

Figure 12 Lubrication Points (Motors and Gearboxes)

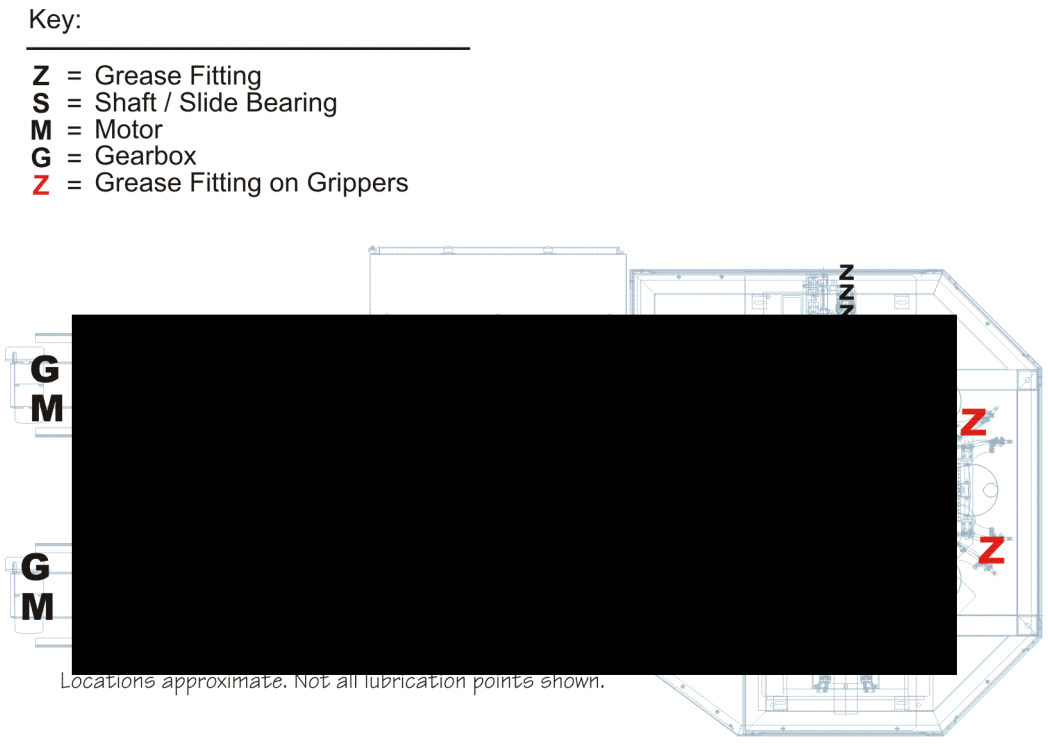
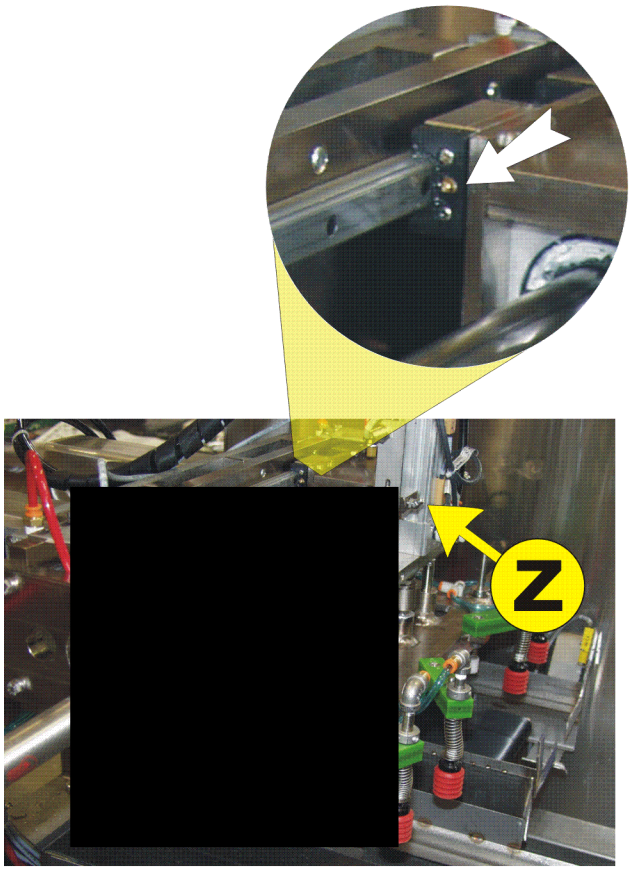


Figure 13 Bag Pick and Place Shaft Lubrication



Total of four grease fittings

These fittings are lubricated using the special grease gun adapter shipped with “washdown” machines. Lubricate to purge moisture.

Bearings are permanently lubricated on non-washdown machines, and do not require lubrication.

“Z” indicates standard grease fitting.

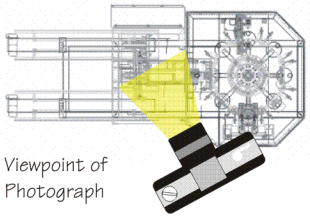
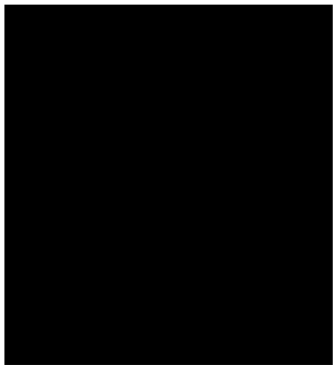


Figure 14 Bag Gripper Lubrication Point



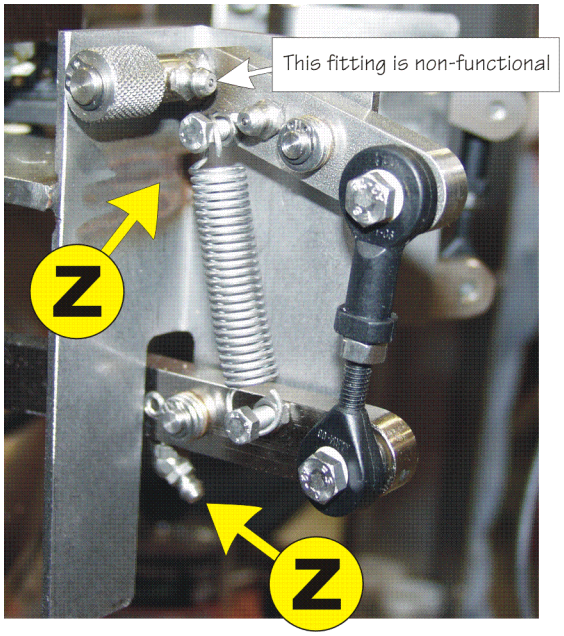


Figure 15 Dial Plate Lubrication

Lubricate to purge moisture on “washdown” machines.
Bearings are permanently lubricated on non-washdown machines.

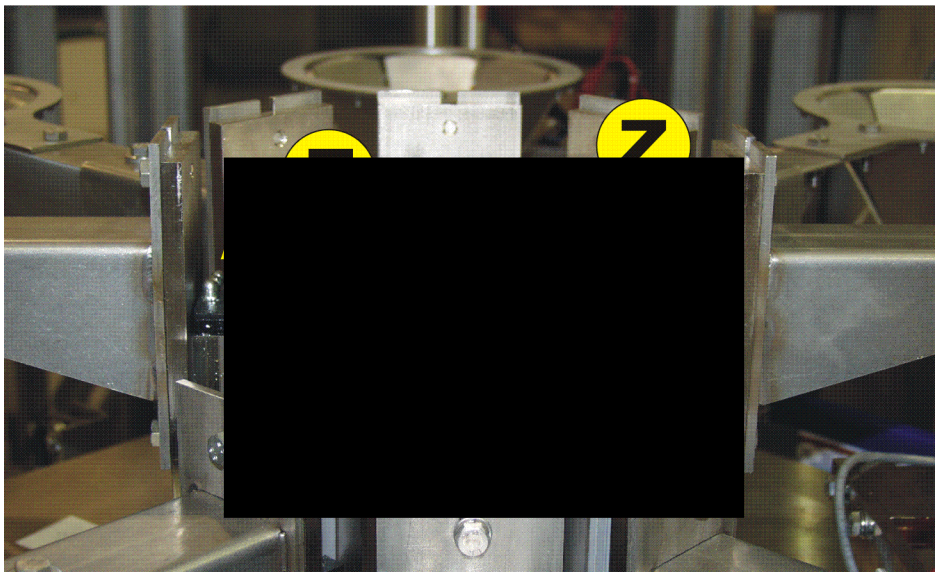
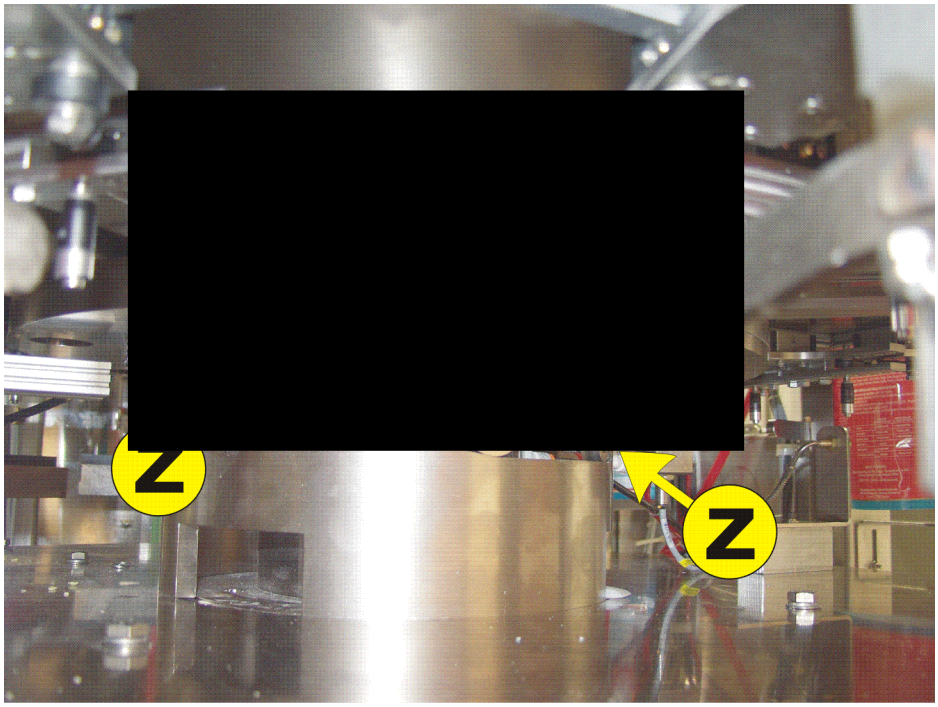


Figure 16 Cam Follower Lubrication



(Not all fittings shown in photograph.)

Figure 17 Station 1 Bag Pick and Place Lubrication Points

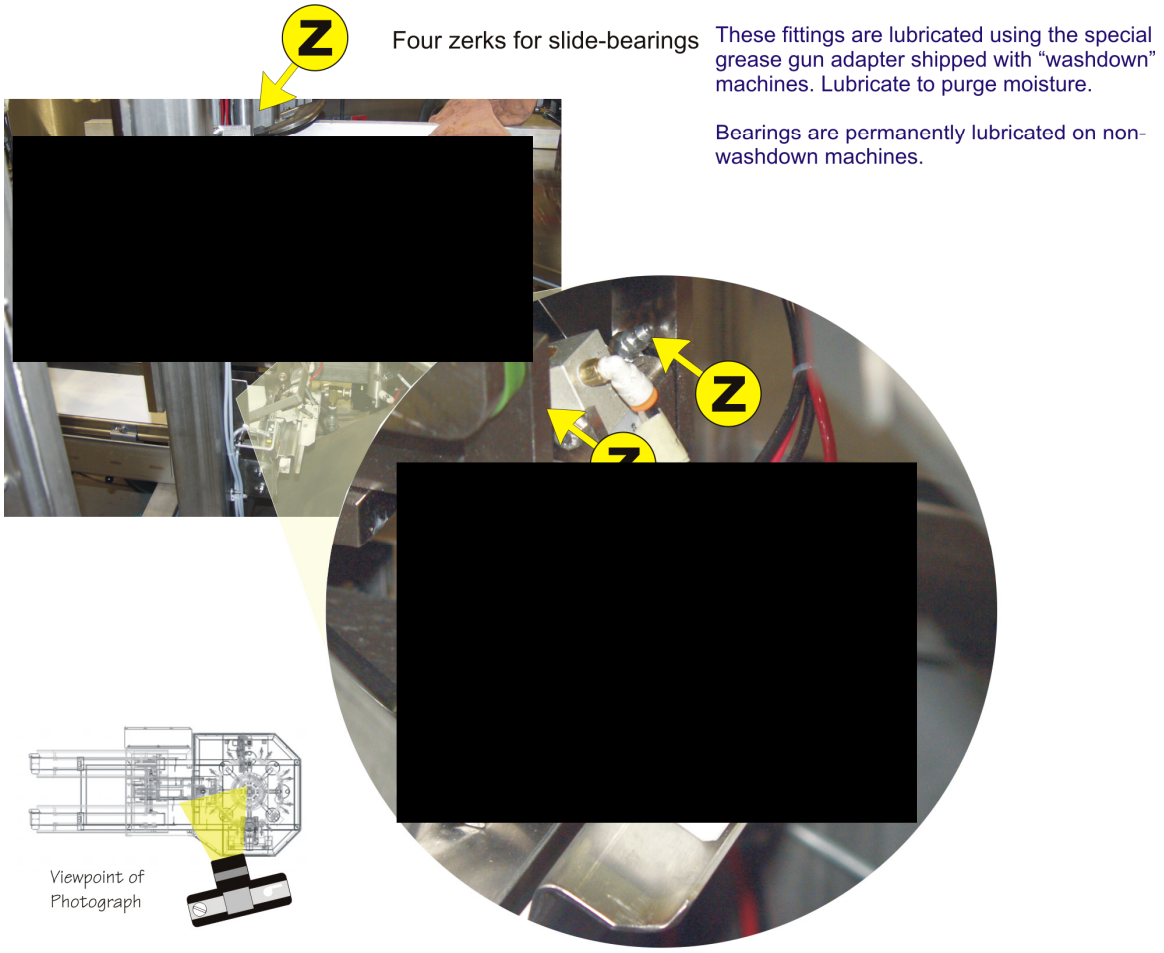
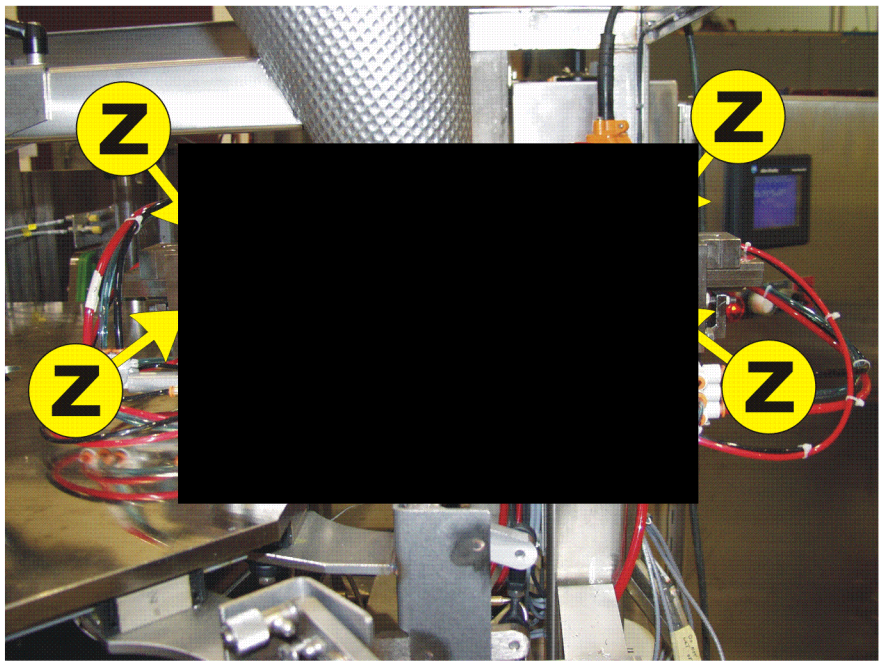


Figure 18 Bag Opener Lubrication

Four fittings on the bag opener (not visible in this photo) require the special grease gun adapter shipped with “washdown” machines to lubricate to purge moisture. (These bearings are permanently lubricated on non-washdown machines.)

The grease fittings shown in the photograph require standard grease guns.



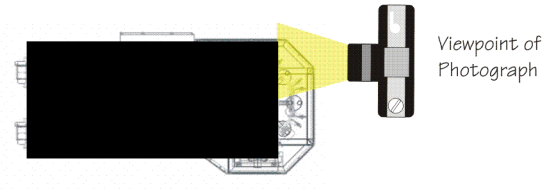
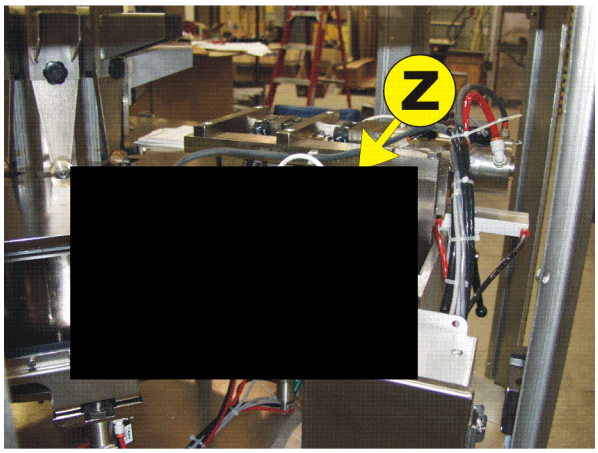
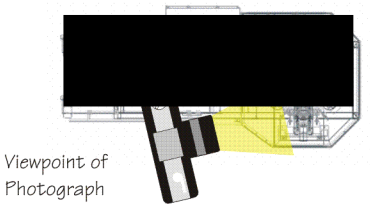


Figure 19 Bag Sealer Lubrication Points

These fittings (total of 8 fittings on linear bearings) are lubricated using the special grease gun adapter shipped with “washdown” machines. Lubricate to purge moisture.

Bearings are permanently lubricated on non-washdown machines.

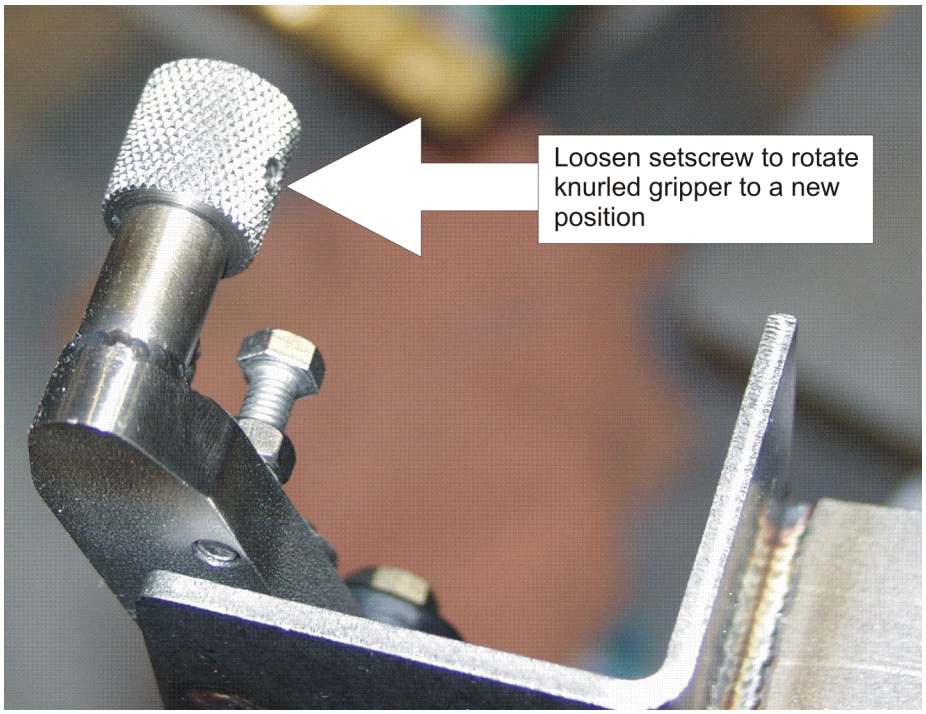




Bag Gripper Knurled Shaft Repositioning

The knurled bag “grabber” on each bag gripper mechanism may become worn with time and have less grip. It can be rotated on its shaft to expose an un-worn surface to the bag by loosening the setscrew as shown.

Figure 20 Knurled Bag Gripper Repositioning

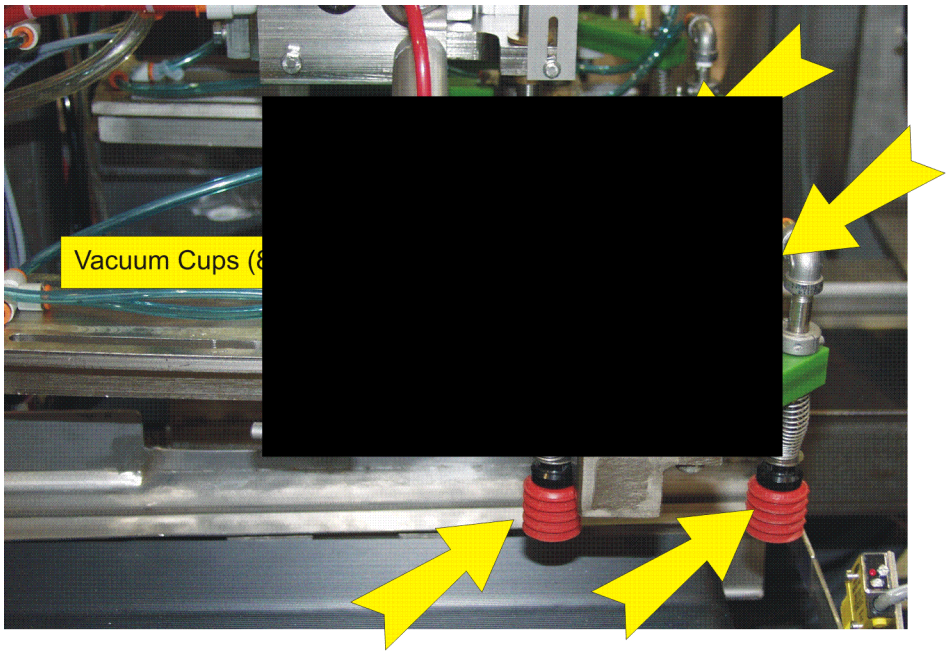


Vacuum Cups (Bag Pickup)

There are vacuum cups located on the Bag Pick and Place, and on the Bag Opener. These cups must be inspected daily and replaced as soon as they show signs of deterioration.

Whenever the Bag Pick and Place or the Bag Opener are missing bags or failing to open bags, these vacuum cups should be one of the first things to check and replace.

Figure 21 Vacuum Cups



Heat Seal Taping (Station 7)

Machine operators should periodically inspect the quality of the heat seals as product exits the machine, and also visually inspect the tape covering the Heat Seal Jaws.

Three different types of tape are used on the jaws. A backing tape is placed between the jaw surface and the metal heat band. A layer of "relieved" Teflon® tape is place over the heat band along its length and a strip of Teflon® tape is wrapped on each end to secure the ends of the 'relieved' tape in place. (Do not apply more than one thickness of each of these tapes to the heat-sealing surface of the jaws.)

When these tapes begin to deteriorate or pieces break off, they must be replaced. See the Bill of Materials for information to purchase these tapes.

Experience will indicate how often these tapes will need to be replaced. A regular preventative maintenance schedule will reduce down-time related to re-taping the heat sealing jaws.